

Recommendation #296
SNF Processing Credit for H-Canyon Operations

Background

The receipt of spent nuclear fuel (SNF) from foreign and domestic reactors is an ongoing program at SRS and has been for many years. Current planning indicates that such shipments will continue for a number of years in the future. Much of the spent nuclear fuel has highly enriched uranium (HEU).

While there has been continued uncertainty about DOE's plan for disposition of SNF, it has been the position of the CAB that Research Reactor SNF should be processed through H-Canyon with the useable HEU blended down and used in the light water power reactor program and the nuclear waste processed for disposition in the Defense Waste Processing Facility. The budgetary situation has tended to impact operational decisions. For example, maintaining H-Canyon in a safe, standby condition is projected to cost on the order of \$150 M per year, while operating H-Canyon at full capacity is projected to cost about \$170 M per year. The extra incremental cost of \$20 M per year (potential cost savings) seems to be a major factor in not fully committing to SNF processing in H-Canyon.

Discussion

It is not clear at this point how this Research Reactor SNF will be ultimately dealt with from a disposition standpoint. The decision on how to proceed in this matter is part of the larger picture on how DOE will dispose of such Research Reactor SNF in light of the Blue Ribbon Committee Report recommendations issued in January 2012. As noted above the Citizens Advisory Board has expressed strong support for processing the Research Reactor SNF through H-Canyon to recapture the remaining HEU for reuse in nuclear power plants and processing the waste in the DWPF, which is a well-established and controlled disposition pathway.

While other considerations may impact the Research Reactor SNF decision, there is one further option available that should be deliberated and pursued in earnest. That is considering the revenue generated from the sale of the processed and blended-down HEU and applying that funding to support the additional expenses of operating H-Canyon at full capacity.

As we understand it the money generated from the sale of blended down HEU to the power industry is returned jointly to electrical power consumers and the US Treasury "General Receipts." If, however, some of the generated revenue were applied to funding the incremental cost of operating H-Canyon it may be possible for H-Canyon to operate in such a manner that H-Canyon could pay its own way and have minimal impact DOE- EM funding picture. While such an approach will require congressional approval and will present some administrative difficulties it should still be pursued since it makes a lot of common sense.

From a practical standpoint the only available disposition pathway for this fuel is processing in the SRS H Canyon. H Canyon has adequate processing capacity and can process the fuel at essentially no incremental cost to the federal government, after sale of recovered uranium is considered.

DOE planning was to begin processing these fuels in 2010, but “administration proliferation policy concerns” cancelled processing at the last minute- with no alternate means of safe disposition being offered. The situation is unacceptable for at least three reasons:

1. Research reactor fuel continues to deteriorate and a pathway to final disposition must be addressed at an early time.
2. H-Canyon has a limited lifetime, and it will take approximately ten years to process all the fuel using H-Canyon. In the future if H-Canyon is not available, there will be no ready means for disposing of the Research Reactor SNF- resulting in an undesirable situation at SRS.
3. The L-Basin is reaching its capacity for storing research reactor Research Reactor SNF. DOE will likely request funds to expand L-Basin. These funds would be better spent by processing the SNF in H-Canyon.

Permitting the HEU-Blend down sale receipts to pay for incremental operating costs, while making good use of the processed HEU, allowing prompt and efficient disposition of the Research Reactor SNF, and providing further employment for citizens around SRS is a definite positive step forward. It should be implemented.

Recommendations:

The Savannah River Site Citizens Advisory Board recommends that DOE:

1. Reevaluate the desirability and economics of processing of SNF in H-Canyon considering that revenue generated could be used to offset increased operating costs.
2. Present such an option to HQ and strongly represent the schedule improvements, the saved storage costs, and the potential improved health and safety impacts.
3. Make an appeal to HQ to allow increased cost of H-Canyon full operations be funded in part by the revenues generated from the recovered uranium sales.